

**REMARKS**

Claim 1 remains in the present application. Claims 2 - 22 have been cancelled. Based on the remarks herein, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

Claim 1 was rejected under 35 U.S.C 102(b) as being anticipated by “Minimal Non-Orthogonality Rate 1 Space-Time Block Code for 3+ Tx Antennas” by Tirkkonen, et al. (*Tirkkonen*). Claim 1 recites “generating a rate-one, ***space-frequency code*** matrix from the received content for transmission via the plurality of three or more transmit antennae...”

*Tirkkonen* is directed to use of ***space-time*** block codes. See, for example, Absract, Section II.

To anticipate a claim, the reference must teach ***every element*** of the claim. MPEP § 2131 states:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Space-time codes exploit spatial transmit diversity and require that the transmitter and the receiver have channel state information (CSI). In contrast, space-frequency codes exploit both space and frequency diversity.

Further, traditional mapping of space-time codes to space-frequency codes require trading diversity for coding gain.<sup>1</sup> That is, full diversity with three or more transmit antenna cannot be achieved via these simple, traditional mappings. See, for example, Paragraph 0005 of the Specification as originally filed. Therefore, *Tirkkonen* cannot anticipate the invention as recited in claims 1 and 23.

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<sup>1</sup> [http://www.mk.tu-berlin.de/mitarbeiter/tub/lehrbeauftragte/intro\\_stc-sfc-coding](http://www.mk.tu-berlin.de/mitarbeiter/tub/lehrbeauftragte/intro_stc-sfc-coding)

**CONCLUSION**

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1 and 23 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,  
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